



The Female Athlete Triad

What is the Female Athlete Triad?

The female athlete triad is a syndrome that consists of three related conditions: (1) disordered eating habits, (2) irregular or absent menstrual periods, and (3) osteopenia (thinning of the bones). This syndrome occurs most commonly in sports where a lean physique is thought to provide a competitive advantage, such as cross-country running, gymnastics, figure skating, and dance. However, any female athlete with unhealthy eating habits is at risk for female athlete triad.

Why does it happen?

All athletes need a constant source of energy to perform at their best. This energy is provided by the calories found in the food they eat. When an athlete is training very hard (burning energy) and not eating enough calories, the body does not have enough energy to support normal body functions like the menstrual cycle. When menstrual cycles are disrupted, estrogen levels fall. Estrogen plays a key role in building bone density. Without sufficient estrogen, the body cannot absorb calcium from food. This causes the bones to become thin and susceptible to fractures.

What are the signs?

Your child may exhibit changes in her eating behaviors, such as restricting food intake, fasting, or eliminating entire food groups, such as dairy products or meat. She may also try to lose weight by inducing vomiting or using laxatives, water pills, or diet pills. She may insist on exercising beyond what is required by her team. She may lose weight, develop irregular menstrual cycles, or still not have had her first menstrual period well beyond the age when most of her peers have started having periods. She may complain of feeling cold, lightheaded, or fatigued. She may have noticed a decrease in her athletic performance, or inability to complete her usual workouts. She may have developed one or more stress fractures.

How is it diagnosed?

Your doctor will gather information about your child's eating habits, menstrual cycles, and attitude about her weight and body image. He/she will also take a family history and measure your child height and weight to determine if her body mass index (BMI) is abnormally low (less than the 5th percentile for her age). Blood tests may be ordered to look for other causes of menstrual cycle dysfunction. If there is a history of stress fractures, your doctor may recommend a bone density test that assesses the level of calcium in your child's bones.

How is it treated?

The most effective treatment for the Female Athlete Triad involves a team approach where your child and family will have regular meetings with your doctor, a nutritionist and a clinical psychologist. Your doctor will monitor the medical status of your child. A nutritionist creates a plan with your child for healthy eating behaviors and a diet with an appropriate amount of calories to maintain normal body functions as well as exercise. A psychologist is helpful for athletes who are struggling with stressful circumstances in their lives or are feeling pressure to succeed, both of which may cause athletes to adopt disordered eating patterns in an attempt to relieve stress and maintain control. Your family can continue to offer a supportive environment for your child, encouraging her to use healthy eating behaviors and safe training practices to achieve her athletic goals.



When can my child return to his or her activity?

The goal is to return your child to his or her sport as quickly and safely as possible.

In mild cases, your child may be able to continue practicing and competing during treatment. Exercise duration and frequency, along with calorie intake should be closely monitored.

In more serious cases, your child may not be returned to sport until she has demonstrated that she can sustain healthy eating behaviors and consistently take in an adequate number of calories to maintain normal menstrual function.

What are the potential long-term effects of the Female Athlete Triad?

If left untreated, female athlete triad can have detrimental effects on the athlete's health. Serious medical complications may occur. Osteopenia can lead to recurrent stress fractures that may cause chronic pain if they do not heal properly. Persistent low weight and absent menstrual cycles may lead to problems with fertility later in life. Eating habits such as induced vomiting, use of laxatives, diet pills or water pills may lead to alterations in the body's chemistry that are life threatening and require hospitalization to safely correct.

Educating athletes, parents and coaches about the signs, symptoms and negative health consequences of the female athlete triad is the most important step in prevention. Taking your child to her doctor for regular check-ups and sports physicals is important so the doctor can discuss issues relating to diet, exercise, stress, and menstrual cycles. Loss of a previously normal menstrual cycle should not be considered a normal response to exercise. Any female athlete with irregular menstrual cycles should be evaluated by a physician. Parents and coaches should be reminded to emphasize that success in sports depends on talent, proper training, and a healthy diet with adequate calories, not on attaining a specific body weight, size or shape.